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APPLICATION OF

TENASKA VIRGINIA PARTNERS, L.P.

CASE NO. PUE010039

For approval of a certificate of public convenience and necessity pursuant to Virginia Code § 56-265.2, an exemption from Chapter 10 of Title 56, and interim approval to make financial commitments and undertake preliminary construction work

REPORT OF MICHAEL D. THOMAS, HEARING EXAMINER

October 23, 2001

HISTORY OF THE CASE

On January 16, 2001, Tenaska Virginia Partners, L.P. (“Tenaska”) filed an Application with supporting testimony and exhibits requesting that the Commission grant Tenaska a certificate of public convenience and necessity (“CPCN”) pursuant to § 56-265.2 of the Code of Virginia to construct a 900 MW natural gas-fired combined cycle power plant (the “Facility”) in Fluvanna County, Virginia (the “County”). In addition, Tenaska seeks an exemption from the provisions of Chapter 10 of Title 56, pursuant to § 56-265.2 B of the Code of Virginia, and interim approval to make financial expenditures and undertake preliminary construction work, pursuant to § 56-234.3 of the Code of Virginia. On April 20, 2001, Tenaska supplemented its Application by filing the information necessary to conduct an environmental assessment of the Facility.

On May 4, 2001, the Commission entered an order requiring Tenaska to provide public notice of its Application, establishing a procedural schedule for the filing of testimony and exhibits, and scheduling an evidentiary hearing for July 24, 2001.

On July 24, 2001, the evidentiary hearing was convened as scheduled. Richard D. Gary, Esquire, and John M. Holloway, III, Esquire, appeared on behalf of Tenaska. C. Meade Browder, Jr., Esquire, and Kara Austin Hart, Esquire, appeared on behalf of the Commission’s Divisions of Energy Regulation and Economics and Finance (the “Staff”). Kodwo Ghartey-Tagoe, Esquire, appeared on behalf Columbia Gas of Virginia, Inc. (“Columbia Gas”). At the commencement of the hearing, Columbia Gas presented a Stipulation to which the parties had agreed. (Ex. JS-1).¹ Eight public witnesses testified at the hearing. At the conclusion of the hearing, the parties were directed to file a joint issues statement identifying for the Commission the issues that need to be addressed in this case. The parties were further provided an opportunity to file post-hearing briefs.

¹ The Stipulation recognizes that Tenaska will construct and own a natural gas lateral from the Transco natural gas transmission line located on the site of the proposed Facility, and that the natural gas lateral will be used solely to provide natural gas to the Facility.

Tenaska and the Staff filed a joint issues statement and later filed post-hearing briefs. A copy of the transcript is being filed with this Report.

SUMMARY OF THE RECORD

Written Comments

The Commission received written comments from five individuals and the Piedmont Environmental Council (“PEC”).

Two people filed comments in favor of the Facility. They expressed their opinion that the Facility would be a financial asset to the County; would be hidden from view on the proposed site; would use the latest emissions technology reducing its impact on County residents and the environment; and would add electric capacity perhaps leading to reduced consumer costs for electricity.

Three people filed comments in opposition to the Facility. They expressed their opinion that the location of the Facility is inconsistent with the rural residential zoning for the area; the Facility would lead to the destruction of the rural character of the County; the County does not need additional electric generation capacity; the proximity of the Facility to other power plants in the area raises health concerns because of the additional emissions of nitrogen oxides (“NOx”) and particulate matter (“PM”); the Facility will cause traffic congestion on the County’s rural road system; the Application is unclear on what will happen to the Facility’s wastewater discharges; the Facility and another Tenaska facility proposed for Buckingham County will use excessive amounts of water from the James River; and the Facility, along with other facilities proposed for the Piedmont area of Virginia, may lead to an overproduction of electric generation capacity.

In its comments, PEC believes the Commission’s application review process must address the cumulative environmental impacts from all eight existing and proposed power plants located in proximity to the Facility. The environmental impacts would include the impact to the local community and quality of life, water supply, water quality, and air quality. PEC also believes the Commission must assess the cumulative effects of all eight existing and proposed power plants on the supply of natural gas and electric transmission capacity. PEC believes the transition to retail electric competition appears ill-conceived in light of the problems experienced in other areas of the country and the Federal Energy Regulatory Commission’s (“FERC”) inability to control these problems. In addition to these concerns, PEC is a party in litigation with Tenaska and the County over land use and zoning decisions made to accommodate the Facility. PEC believes any decision by the Commission at this time to approve the Application, in the absence of a cumulative environmental impact assessment, is premature and contrary to the public interest.

Public Witnesses

Eight public witnesses testified at the hearing. All opposed the Facility.

Ms. Norma Hutner lives in the Lake Monticello area of the County; Lake Monticello is a residential area due north of the proposed Facility. It comprises about three percent of the land in

the County, but it accounts for 40 percent of the County's population. With the prevailing winds blowing from south to north, the Lake Monticello area will be the recipient of most of the Facility's emissions of NOx, PM, Sulfur Dioxides ("SO₂"), and carbon monoxide ("CO"). Ms. Hutner believes Tenaska has chosen a poor location for the Facility. She believes the Commission should look at the cumulative effect on the environment of all the power plants proposed for the County and the surrounding area. (Tr. at 22-25).

Ms. Hutner asked the Commission to consider the Facility's impact on the Shenandoah National Park. She states the Shenandoah National Park is one of the most polluted in the nation and the addition of another pollution source will certainly have an impact on the Park. (Tr. at 26).

Ms. Hutner believes the County does not need the Facility's additional electrical generating capacity. She cited a recent U.S. News & World Report article, which stated that due to recent and planned power plant construction, in two years the United States would have a power glut. Ms. Hutner believes a residential area in a rural county is the wrong place to locate the Facility. (Tr. at 26-28).

Mr. Laurence Hutner testified he is an architect by training. He worked on several large-scale institutional projects while he lived in California and he believes the site Tenaska has chosen is ill-suited for a power plant. The roads leading to the Facility are nothing more than narrow country roads, full of twists, turns and hills. The Facility will generate traffic during construction and operation that the roads in the area cannot handle. Mr. Hutner believes no one has an appreciation for the sheer magnitude of the physical size of the Facility. Tenaska requested to develop 67 acres, which is enough land for a good-sized residential subdivision. He believes Tenaska has failed to provide enough information to assess the visual impact of the Facility. The location of the Facility places it almost 45 minutes to an hour away from the nearest fire department, which in the event of an emergency is unacceptable. The County is ill-equipped to respond to such an emergency. Finally, Mr. Hutner believes the area is rightfully designated rural residential and a power plant in the area is about as conflicting a use as one can imagine. (Tr. at 30-37).

Mr. Julius Neelley, another resident of the Lake Monticello area, testified on the land use and quality of life issues related to the Facility. Mr. Neelley is a plaintiff in two lawsuits against the Facility filed in the Circuit Court of Fluvanna County.² Mr. Neelley believes the County's comprehensive plan, which was revised in 2000, is arbitrary and capricious. He described "rural residential planning areas" as areas located around community and primary residential areas in the northern and southwestern portions of the County. These areas are a mix of residential subdivisions, scattered housing, open space, and agricultural and forested districts. Mr. Neelley believes the Board of Supervisors' last minute amendment to the zoning ordinance and Special Use Permit ("SUP") granted to Tenaska are illegal. He believes that just because a large tract of land located over a gas pipeline becomes available for sale, does not mean that it is suitable for industrial development. The Board of Supervisors failed to take into consideration the interests of the citizens when it approved the zoning for the proposed Facility. (Tr. at 39-42).

² On September 22, 2001 and October 11, 2001, the Circuit Court of Fluvanna County entered orders in Case Nos. 00E141 and 00E146, respectively, denying the Complainants' Motions for Summary Judgment and dismissing their Bills of Complaint.

Mr. Neelley was concerned about the state of roads leading to the Facility and the likelihood that increased truck traffic on the roads may lead to increased accidents. He stated the roads are narrow, with no shoulders to avoid an oncoming vehicle. He believes any accident would most likely be extremely serious. (Tr. at 42-44).

Finally, Mr. Neelley sought to dispel the myth that the entire country is facing the same energy crisis that California has been experiencing. He stated California's problems were the result of inane policies it enacted and carried out. Mr. Neelley read excerpts from a May 14, 2001, Newsweek article entitled "Profiting from the Darkness."³ Mr. Neelley believes California's problems do not necessitate the construction of four power plants in rural Fluvanna County, Virginia. Mr. Neelley argues the proposed Facility has no business locating in the County and impacting the health, safety, and future of its citizens. (Tr. at 45-50).

On cross-examination, Mr. Neelley stated he believes the Commission has the ability to reverse the decision of the County Board of Supervisors approving the zoning for the Facility. (Tr. at 50-52).

Mr. John Rueckert, another resident of the Lake Monticello area, testified he is also concerned about the truck traffic to the Facility after construction is completed. Mr. Rueckert believes the issue of road improvements in the area has been inadequately addressed in Tenaska's Application. According to Mr. Rueckert, the Facility will need between 3,000 and 4,000 tanker truck loads of fuel oil delivered during the year, if it operates for the entire 720 hours requested in its permit. The problem is the Facility is located on a road that is not even two lanes wide. He sees the potential for accidents especially if a tanker truck meets a school bus. Mr. Rueckert is also concerned with the number of ammonia trucks that will be making deliveries to the Facility, although the number of ammonia deliveries would be much smaller. He believes the combined

³ The portions read by Mr. Neelley included:

"What created the problem in California is not only deregulation, but a stupid deregulation plan carried out ineptly: the Kilowatt Keystone Cops, as it were. California put a cap on the rates that utilities could charge customers, but until recently it forced utilities to buy all of their power in the short-term market. The utilities foolishly agreed to this deal. The problem: short-term markets are notoriously ruthless. If there's a small surplus of power, you have desperate sellers trying to sell power, which can't be stored. But if there's a shortage, everyone piles on. Had California utilities been allowed to do the rational thing and buy most of their power in long-term markets, they would have paid more initially, but they and their customers would be in far better shape now. Compounding the problem is that while the state deregulated the wholesale rates the utilities paid for power, they capped the retail rates utilities could charge. Combine that with total reliance on the short-term market and – voila! – you're totally at the market's mercy. And markets have no mercy.

In the old days, when utilities were regulated, there was often waste and inefficiency, but power was reliable and utilities cared desperately about keeping the lights on. Now, we have markets that don't care about anything. Someday, markets may give us total reliability at a cheaper price than regulation would. But in the meantime, get used to the piling-on concept. Just hope you end up on top of the pile.

To be fair, you can't attribute these entire increases to California – but you can be sure that California accounts for a good portion of them. There are other, less obvious winners, too. Among them: the unregulated subsidiaries of some companies that own California utilities; aluminum producers that are making more money by closing their plants and selling their power allotments than they would have made by producing aluminum; farms that find it more profitable to resell electricity than to grow crops; and in general anyone in the Western United States or Canada with an electron to spare and some way of getting it into California." (Tr. at 45-47).

impact of these trucks could represent fairly significant truck traffic for the County's rural roads. (Tr. at 53-55).

Mr. Rueckert believes the Facility will hurt property values in the area. The homes in the area range from \$100,000.00 along Rt. 761, to the \$150,000.00 - \$300,000.00 range in some of the subdivisions near the Facility. To build a large industrial plant right next to these properties, especially when the owners had no idea that a power plant of this type would be located in the area, actually destroys the value of these homes. He believes the Facility is destroying any resale value the homes may have. Mr. Rueckert worked all his life to own a home in an area where there is a good quality of life, and he views the Facility as destroying everything for which he has worked. (Tr. at 55-57).

Mr. Rueckert also wonders how many new power plants Virginia needs. He is concerned that at some point in the future the Facility may be a white elephant for the County. Additionally, he wonders what technologies are best suited for Virginia. In terms of water usage, he believes the proposed Facility does not use the latest technology to control emissions. He questions whether the Facility is one of the better power plants that could be built in Virginia. He believes this is especially true considering that water will need to be piped in from the James River, which is 15 to 25 miles away, and the pipeline will cross a number of properties to reach the Facility. (Tr. at 59-60; 62-63).

In terms of infrastructure, Mr. Rueckert believes the County is ill-equipped to handle an emergency at the Facility. Additionally, he expressed his concern over the two to three million gallons of fuel oil that will be stored at the site. If there were an accident at the Facility, the possibility exists that groundwater in the area could become contaminated. Homeowners on well water would then need to purchase water and have it delivered by truck. (Tr. at 59-61).

Finally, Mr. Rueckert stated the issue of conservation should have been considered in the debate over electric deregulation. He mentioned such things as government incentives for the replacement of incandescent bulbs with florescent bulbs, and the development of fuel cell, solar, and wind technologies. (Tr. at 61-62).

Mr. Wendall Pollard, a resident of the Fork Union District, raised several points in his testimony. First, he believes the County and Virginia are jumping the gun with the flurry of power plant applications. There has been no showing that Virginia needs the additional electric power at this time. Second, there is only a 20-year supply of natural gas based on current consumption levels. Third, an impending power shortage may encourage research and development of alternative energy sources such as fuel cells. Fourth, there is significant public opposition in the County to the proposed Facility. Finally, Mr. Pollard doubts the Facility will foster competition in Virginia, since Tenaska has said that it will not be selling power in Virginia. (Tr. at 65-67).

Mr. Richard Kulp testified the smokestacks at the proposed power plant might be visible from the Hidden Valleys subdivision where he lives and is president of the homeowners' association. He is upset with the County's conduct of the approval process. During that process, the citizens were told the plant would emit about 13 million pounds of "stuff" into the air, "some real bad and some just so-so." Mr. Kulp knows what a pound of coffee looks like, so he has some

understanding of what 13 million pounds of “stuff” floating around in the air would look like. (Tr. at 68-72).

Ms. Brenda Beazley testified on the effects of major polluting industries on the quality of life and aesthetics in rural residential areas. She believes historic areas such as *Monticello* and *Ashlawn* should be spared from urban sprawl and industrial pollution. She would like the Commission to review the emissions coming from all of the power plants proposed for the County, especially since the County already has a coal-fired power plant at Bremono Bluffs. (Tr. at 73-78).

Mr. Robert Smith resides in Palmyra and holds a Ph.D. in ecology. He has taught the subject for a number of years and has written two textbooks. His testimony related to the air pollution that would result from the Facility. He testified the Facility will emit 650 metric tons of NO_x per year. When combined with the 228 metric tons to be released by the Competitive Power Ventures plant, which is proposed to be located approximately four miles away, it would significantly affect the air quality in the local area. These high concentrations of NO_x emissions could lead to the formation of acid rain; cause irritation to eyes, nose and lungs; and cause visible leaf damage and reduce plant growth. The NO_x emissions would be broken down by ultraviolet light to form ozone, another damaging pollutant. Although the Facility’s air quality permit addresses ozone concentrations at the Environmental Protection Agency (“EPA”) monitoring station in Roanoke, it does not address ozone concentrations in the neighboring area. Mr. Smith believes local monitoring of ozone is critical, since the highest concentrations of ozone would occur near the source. Mr. Smith modeled the ozone output for the two proposed power plants and results were above the 0.120 considered by the EPA for an ozone alert. He believes the County will soon be an air quality non-attainment area. On hot summer days, the area will be shrouded in smog, including the valley surrounding *Monticello*. Because of the lack of monitoring in the local area, the County will not receive the same smog alerts that Richmond currently receives. (Tr. at 81- 92).

Testimony and Evidence

Tenaska presented the testimony of two witnesses: Mr. Bill Braudt, general manager, project development for Tenaska, Inc. and Dr. Greg Kunkel, manager, environmental affairs for Tenaska, Inc.

In his prefiled direct testimony, Mr. Braudt described the facility as a 900 MW natural gas-fired, combined cycle power plant located in the Cunningham District of the County. The Facility would be located on a densely wooded 550-acre tract off Route 761 north of Antioch. Previously, the site was a tree farm for an international paper company. Tenaska plans to use approximately 50 acres of land located toward the center of the property for the plant location. The facility would use three GE 7FA-combustion turbines and one GE steam turbine to produce electricity. Although the primary fuel for the facility will be natural gas, Tenaska is also seeking permits to allow the burning of low sulfur fuel oil for a maximum of 720 hours per year. The estimated cost of the Facility is in excess of \$250 million. Equity and non-recourse financing from large U.S. and international commercial banks, and/or the U.S. corporate bond market would be used to finance the project. The Facility would interconnect with Dominion Virginia Power’s 500 kV Doores to Elmont transmission line that runs through the project site. (Ex. WB-2, at 1-3).

Tenaska would enter into a “tolling” agreement with a major wholesale power purchaser that would provide natural gas for the project and purchase the Facility’s entire output. The Facility would be capable of operating as a base load generator year round. The Facility’s dispatch would depend on a number of factors, including market demand. Tenaska would oversee the construction of the Facility, which would be accomplished by a “turn key” contractor. A Tenaska affiliate would operate the Facility. During construction, the Facility would employ 500 to 600 construction workers. After completion, it would employ 25 to 30 permanent employees at an annual estimated payroll of \$2 million. (Ex. WB-2, at 3-5).

Finally, Mr. Braudt testified the County’s SUP contains 34 specific conditions designed to ensure that the rural character of the area surrounding the proposed Facility is maintained. (Ex. WB-2, at 3; Ex. WB-2, Attachment 2).

At the hearing, Mr. Braudt reiterated that the County included the 34 conditions in the SUP to address concerns raised by local citizens. He has managed six other power plant projects and none of these has special use conditions. Tenaska intends to comply fully with all 34 conditions. Mr. Braudt specifically addressed Conditions 23 and 24, which cover traffic management during construction and operation.⁴ The bulk of the traffic will occur during construction. Tenaska intends to transport the construction workers by bus from a central location to the building site and it intends to schedule deliveries of construction materials and plant equipment during off-peak times. When the Proposed Facility is in operation, it will have a minimal impact on traffic. The Facility will have five or six employees during the day shift and two to three employees during the night shift, seven days a week. The issue of fuel oil deliveries to the Facility will be addressed in Tenaska’s traffic management plan. VDOT and the County must approve the overall traffic management plan before construction on the Facility can begin. (Tr. at 108-13).

Mr. Braudt addressed the Facility’s use of fuel oil. The Facility will have on-site storage for approximately 3.6 million gallons of fuel oil, an amount sufficient to operate the Facility at 100% capacity for approximately 72 hours during emergency periods. Tenaska reviewed data from other power plants operating in Virginia to arrive at its 72-hour maximum burn time without refueling. It is not aware of any other facility in Virginia that has needed to operate 72 hours on an alternative fuel. It has been Tenaska’s experience at other plants that they rarely burn fuel oil. In this case, Tenaska wants to burn a low-sulfur fuel oil not yet available in Virginia, but expected to be available by 2004. Tenaska has found that operating on fuel oil is usually very expensive and causes greater wear and tear on its equipment. However, Tenaska believes that it needs the capability to be on-line during emergency periods. (Tr. at 114-16).

Mr. Braudt testified Tenaska might use up to 71 acres of the 550-acre site to construct the Facility and associated infrastructure. Condition 17 of the Special Use Permit requires Tenaska to restrict future development on the remainder of the property and place it in an appropriate

⁴ Condition 23 provides that: “[t]he Virginia Department of Transportation [“VDOT”] shall approve access to the proposed facility and the applicant will provide all required improvements.” Condition 24 provides that: “[a] construction traffic management plan shall be submitted as part of the overall site development plan. Review and approval by VDOT of the construction traffic management plan will ensure that temporary construction entrances and access roads are provided appropriately that “wide load” deliveries are scheduled during off-peak times, and that access routes to and from the site are planned to minimize conflicts.” (Ex. HS-9).

permanent conservation program approved by the County Zoning Administrator prior to January 1, 2004. Condition 20 requires Tenaska to submit a forestry management plan for approval by the County to ensure a healthy stand of trees in the buffer. The site is planted predominantly in pine trees, 80% of which are mature. Tenaska believes the tree buffer is an important component of the site and it intends to actively manage the buffer. The tree buffer essentially obscures the Facility from view from the surrounding properties. Tenaska has no objection to including input from the Virginia Department of Forestry (“DOF”) and the Virginia Department of Game and Inland Fisheries (“DGIF”) into its forestry management plan. (Tr. at 117-22, 138-43).

To address citizen concerns about the potential decline in property values, Tenaska has agreed with the County to offer a “Value Protection Plan” to the residents along Route 761, which is the road adjoining the plant site. The Value Protection Plan offers these homeowners the opportunity to register their home in the program. The home would be appraised by one of four local appraisers, who are specifically instructed to appraise the home as if there were no proposed power plant, to determine its fair market value. During the next four years, Tenaska has agreed to purchase the home if the homeowner is unable to sell the home or the value of the home declines. If Tenaska must purchase a home, it intends to resell the home with a notice placed in the deed that the home is located near a power plant. Several homeowners have requested information packages, but none has registered. (Tr. at 122-24; Ex. WB-3).

On cross-examination, Mr. Braudt indicated construction on the Facility is scheduled to begin in the spring of 2002. Until then, Tenaska will focus its efforts on obtaining all the necessary permits and issuing its engineer, procure and construct contract. He stated there will be no visible vapor plume from the Facility’s three stacks. Any vapor plume would come from the cooling tower and would occur only during certain atmospheric conditions. In terms of visual impact, Tenaska has never had a site as good as this one. The plant will be almost totally hidden from view by the tree buffer surrounding the plant. (Tr. at 126-29).

Mr. Braudt explained the anticipated “tolling agreement” Tenaska will enter with a major wholesale power purchaser. All of Tenaska’s facilities throughout the United States have long-term power purchase contracts, tolling agreements, or conversion agreements for the life of the loan before Tenaska ever starts construction. Tenaska builds and operates generation facilities; it does not engage in the business of wholesaling electricity. Tenaska does not want to assume that business risk and it is not part of its business plan. (Tr. at 129-32).

Finally, Mr. Braudt testified approximately 30 homes located along Route 761 would qualify for the “Value Protection Plan.” The residents in Lake Monticello, which is located about four miles away, would not qualify for the program. (Tr. at 134-37).

In his prefiled direct testimony, Dr. Greg Kunkel addressed the environmental impacts of the Facility and how those impacts would be minimized. Dr. Kunkel believes the proposed site for the Facility is suitable for a number of reasons including availability of natural gas delivery and electric transmission infrastructure at the site, remote location, and the forested buffer that will surround the Facility. (Ex. GK-4, at 1-2).

Dr. Kunkel testified pipeline quality natural gas would be the primary fuel for the Facility. The back-up fuel would be 0.01% low sulfur fuel oil. Fuel oil would be used as a back-up fuel from October through March and no more than 720 hours per year. Emission controls for the Facility include dry low-NOx combustors in each combustion turbine. In addition, a selective catalytic reduction system will be installed to further reduce NOx emissions. Water injection will be employed to reduce NOx formation when the combustion turbines are operating on fuel oil, in addition to selective catalytic reduction. Emissions of SO₂ and PM will be minimized through the use of clean fuels. Emissions of CO will be limited by combustion controls.⁵ Dr. Kunkel believes the data in its PSD permit application demonstrate that, assuming the Facility will emit at its maximum potential emissions rate, the air quality impact of the Facility will be well below all applicable federal and state health-based standards. The PSD permit application shows that the Facility will not have an adverse impact on any federally managed land, such as the Shenandoah National Park. In fact, the Facility's emissions do not even meet the significance levels for any criteria pollutant. Tenaska's air quality modeling techniques, which have been approved by the DEQ and the EPA, show that the impact of the proposed Facility will not be "significant." (*Id.* at 2-4).

Dr. Kunkel believes it is important, when considering the cumulative environmental impact of new electric generating facilities, to consider the emissions reductions which will be required of existing electric generating facilities in Virginia and throughout the region under the EPA's call for State Implementation Plans for reduction of NOx ("NOx SIP Call"). Dr. Kunkel states these new EPA regulations will require over 20,000 tons of annual NOx emission reductions in Virginia and place a cap on emissions far below today's level. Further NOx reductions will result from other federal regulations and the EPA's recent settlement with Virginia Power. (*Id.* at 5).

Dr. Kunkel testified the Facility will require approximately seven million gallons of non-potable water per day. An affiliate of Tenaska, East Coast Transport, Inc. ("ECTI"), would construct an intake in the James River to withdraw the water, and would construct a 24- to 30-inch pipe to transport water to the Facility. Dr. Kunkel believes the construction of the water intake and pipeline will have temporary, minor, and reversible environmental impacts on the James River and along the proposed pipeline route. Tenaska believes the water flow of the James River is sufficient to meet its needs. However, at the request of DEQ, it has developed a voluntary water conservation plan in the event the river experiences low flow conditions. Potable water for the Facility will be treated on-site. The Facility will also produce wastewater effluent primarily consisting of cooling tower blowdown, low volume wastewater sources, and storm water. The wastewater effluent will be discharged on the plant site to the Middle Fork of Cunningham Creek, which flows into Cunningham Creek, the Rivanna River, and then into the James River. Licensed contractors will dispose of any solid waste, including hazardous waste, off-site. No hazardous waste will be stored, treated, or disposed of on the site. (*Id.* at 6-8).

Finally, Dr. Kunkel testified the Facility will establish an Environmental Management System to ensure that the Facility complies with myriad of state and federal environmental regulations. The Facility will establish written procedures, training programs, management reviews,

⁵ The Facility's potential air emissions are described in detail in the Prevention of Significant Deterioration ("PSD") permit application filed with the Virginia Department of Environmental Quality ("DEQ") in September 2000 and supplemented in October 2000. (Ex. GK-4, at Attachment 1).

and routine audits with appropriate mechanisms for correcting deficiencies to ensure compliance. As required under its operating permit, Tenaska will certify compliance on a regular basis. (*Id.* at 9).

In his prefiled rebuttal testimony, Dr. Kunkel addressed a number of issues raised in the coordinated environmental review conducted by DEQ. (Ex. GK-5, at 1-2).

Dr. Kunkel provided additional information on ECTI and how it intends to supply non-potable water to the proposed Facility. He provided a copy of the Joint Permit Application ECTI filed with the U.S. Army Corps of Engineers, DEQ, and the Virginia Marine Resources Commission. ECTI was incorporated as a Virginia public service corporation and has filed rates and regulations with the Commission. ECTI plans to install a single infiltration bed on the bottom of the James River and deliver water to its customers through individual distribution pipelines connected to its pumping facility. To serve the Facility, ECTI plans to construct a pipeline from the pumping station, upstream along the Buckingham side of the James River to the Route 15 bridge, under the bridge, along the Route 15 right-of-way, and then along an existing utility right-of-way to the Facility. ECTI also plans to transport water via the pipeline to a reservoir to be constructed and owned by another Tenaska affiliate, on the south side of the James River. This reservoir will be used for plant operations during drought periods in lieu of withdrawals from the James River. (*Id.* at 2-3; Attachment GK-R-3).

Potable water for the Facility will be provided by an on-site well and sanitary sewer service through a septic drain field. (*Id.* at 4).

ECTI is requesting authority to withdraw water from the James River at its full capacity rate, 28.2 cubic feet per second. Dr. Kunkel presumes the conditions and restrictions contained in the Virginia Water Protection Permit issued by DEQ will address ECTI's capacity withdrawals, rather than the amount withdrawn to serve any single customer. Dr. Kunkel states ECTI's water permit will incorporate minimum instream flow requirements restricting or preventing withdrawal of water during certain low flow periods. ECTI has included a "Drought Analysis and Contingency Plan" in its permit application. The plan includes voluntary and mandatory conservation measures triggered by flow levels designed to maintain necessary flows in the Falls of the James area consistent with the James River Regional Flow Management Plan for the Falls of the James Area (1996) and the City of Richmond's Draft Regional Water Conservation Plan (1998). (*Id.* at 4-5).

Tenaska has developed a drought management plan for the Facility that includes operational controls to reduce water consumption, and augmentation of the water supply (using ECTI's pipelines) from offstream storage facilities. Tenaska will implement those measures during periods when ECTI's normal delivery of water is impacted as the result of restrictions in its water permit. (*Id.* at 5).

Dr. Kunkel confirmed there are no wetlands, historic resources, or endangered species located on the site of the proposed Facility. ECTI's pipeline will follow existing utility rights-of-way to avoid impacting forested wetlands. (*Id.* at 6).

In response to PEC's comments, Dr. Kunkel testified the National Ambient Air Quality Standards ("NAAQS") have been established under the Clean Air Act to ensure that ambient levels

of certain pollutants do not pose a threat to public health or the environment. The pollutants for which standards have been established are ozone, particulate matter, sulfur oxides, nitrogen dioxide, carbon monoxide and lead. Although volatile organic compounds (“VOCs”) and NO_x are themselves subject to the NAAQS, their emissions are controlled because they are potential precursors of ozone formation. The Facility’s hazardous air pollution emissions are all below federal and state thresholds. (*Id.* at 8).

Finally, Dr. Kunkel described the additional air quality modeling used to determine the Facility’s potential visibility and acid rain impacts on the Shenandoah National Park. Tenaska was required to conduct this analysis because the PSD program requires all new facilities to demonstrate that they will have no adverse impact on “air quality-related values” in Class 1 areas, such as the Shenandoah National Park. Tenaska’s modeling indicates the Facility will have no significant impact on either visibility or other air quality-related values in the Park. (*Id.* at 10).

At the hearing, Dr. Kunkel submitted into evidence a revised Chapter 6 to Tenaska’s air quality modeling report. The changes did not impact in any material way the modeling results. Using the worst-case scenario, the Facility operating at 100% capacity in the worst possible weather conditions, the Facility’s emissions are below any modeling significance levels, which he stated are a fraction of the NAAQS. (Tr. at 146-47, Ex. GK-6).

Dr. Kunkel addressed the issue raised by the public witnesses and the PEC concerning the cumulative environmental impact of the various power plants proposed for the County and surrounding counties. Under existing rules, if the Facility’s emissions had exceeded the modeling significance levels, Tenaska would have had to conduct additional modeling, including all of the existing emissions within an area specified by DEQ, to determine whether the combined emissions exceeded what is called an allowable increment under the PSD Program, which is some fraction of the NAAQS. Since the Facility’s emissions were below the modeling significance levels, Tenaska was not required to conduct the additional air quality modeling. Dr. Kunkel believes federal programs such as the NO_x SIP Call will do more to address regional air quality issues, particularly as it concerns NO_x emissions. Under this program, which is to go into effect in May 2004, electric generating facilities in Virginia must reduce NO_x emissions by 20,000 tons. These reductions would be achieved by building newer generating plants and retiring older plants, or retrofitting existing plants with newer emissions technology. Tenaska’s air quality models, which assume the worst case scenario, indicate that the Facility will produce 565 tons of NO_x emissions per year. The Facility would be regulated under the new federal NO_x cap. Under the program, facilities could trade NO_x allowances much the same way as SO₂ allowances are traded today. (Tr. at 147-54).

Dr. Kunkel testified the County is in attainment of each of the NAAQS criteria pollutants, which include NO_x and SO₂. Under the PSD Program, Tenaska met with federal land managers, including the U.S. Park Service, U.S. Forest Service, and U.S. Fish and Wildlife Service, to determine the Facility’s impact on federal lands, including the Shenandoah National Park. Tenaska’s air quality models show emissions are below the significance levels identified by the federal authorities. For example, the NAAQS for NO_x is 100 micrograms per cubic meter of air on an annual average basis. The modeling significance level is 1 microgram per cubic meter of air, or one percent of the NAAQS. Tenaska’s air quality models show emissions under 1 microgram, assuming the worst-case scenario. As compared to the typical coal-fired generation plant, the

Facility would produce one to two percent of that plant's emissions. To further reduce the Facility's emissions, Tenaska plans on using .01% sulfur fuel oil, which is presently not available in Virginia, as opposed to .05%, which is the industry standard today. (Tr. at 154-59).

Dr. Kunkel also addressed safety concerns relating to the Facility. Tenaska will develop an integrated contingency response plan for the Facility. The plan would incorporate all federal and state safety requirements. These requirements include, in part: (1) Condition 7 in the Special Use Permit, that Tenaska provide the first response to any emergency at the Facility; (2) Section 112 of the Clean Air Act Amendments of 1990 which covers the storage of ammonia; (3) the Clean Water Act requirements for oil spill prevention, control and counter measures; and (4) the Oil Pollution Act of 1990 requirements for the construction and monitoring of oil storage facilities. Dr. Kunkel stated the EPA and Occupational Safety and Health Administration ("OSHA") support integrated contingency response plans. The plan would be provided to the local governing body and local emergency management agencies. Tenaska would train its employees against the plan, including training its employees in fire fighting. The design of the Facility would also incorporate the ability to respond remotely to any emergency relating to ammonia releases, oil spills, or fires. (Tr. 160-64; 207-11).

Dr. Kunkel stated Tenaska would be willing to work with the DGIF in monitoring the water at the Fluvanna Ruritan Lake. The Facility would have a chemistry lab on-site with the ability to measure such things as alkalinity. (Tr. at 165-66).

Although Tenaska's data indicate there is an extremely small probability that water for the Facility from the James River would be disrupted, as part of its risk management, ECTI, a Tenaska affiliate, is considering the construction of a reservoir to provide an emergency water supply to both the Facility and another Tenaska facility proposed for Buckingham County. To meet the water demands of both power plants, the reservoir would cover approximately 50 acres at an average depth of 20 feet. Other than quantity and water quality, Tenaska has not considered other potential uses for the reservoir. Dr. Kunkel stated that the reservoir would be full most of the time and it would make "darned good quality habitat for something." He saw no reason why Tenaska could not work with the DGIF to maximize the reservoir's benefit to wildlife and the public. Dr. Kunkel stated emphatically on the record that ECTI, not Tenaska, would build any reservoir. (Tr. at 166-77).

Dr. Kunkel provided a status report on the various environmental and operating permits Tensaka is in the process of obtaining for the Facility. Tenaska believes that any order issued by the Commission does not change the requirement to acquire all of the necessary permits for the Facility, and comply with any conditions placed on those permits. Dr. Kunkel recommended that the record remain open so the Commission could receive DEQ's PSD air permit. (Tr. at 178-82).

On cross-examination, Dr. Kunkel explained how DEQ, the U.S. National Park Service, U.S. Forest Service, and U.S. Fish and Wildlife Service assisted in establishing the Facility's air modeling protocols. These entities determined not only what models would be used, but what assumptions would be used in the models. DEQ provided the five years of meteorological data to be used in the models. Using these inputs, the computer models predict the Facility's emissions under certain atmospheric conditions at various points from the Facility. Dr. Kunkel further explained that the NOx emissions cap would apply to 22 states in the eastern region of the United

States and the 20,000 tons of NO_x reductions required under the cap would be allocated among the states. The amount of reduction allocated for Virginia has not been established. Once established, the NO_x program would work the same as the SO₂ program works today. Dr. Kunkel mentioned the recent settlement between the EPA and Dominion Virginia Power as a source of additional NO_x reductions in Virginia. (Tr. at 182-90).

Dr. Kunkel addressed the design of the water intake structure to be located in the James River. Rather than using a traditional intake pipe and screen structure, ECTI is proposing an infiltration bed to be located on the river bottom. The infiltration bed allows water to trickle through several feet of gravel located above the structure to be collected and then pumped to the Facility. This type of structure eliminates the DGIF's concerns related to entrapment and impingement of aquatic life. The pumping station for the infiltration bed would be located well away from the river to protect the scenic view for canoeists or other boaters using the river. He also addressed the routing of the water transmission pipeline. ECTI plans on routing the pipeline for the Facility along existing utility easements. Although this may involve additional stream crossings, it minimizes the impact to citizens along the route and maximizes the use of an already existing utility easement. He believes horizontal boring under any stream crossing can mitigate the pipeline's impact on the environment. (Tr. at 198-201).

On redirect, Dr. Kunkel clarified the statement he made on cross-examination concerning the reduction in NO_x emissions in Virginia. He stated the NO_x SIP Call will result in a 20,000-ton reduction of NO_x emissions in Virginia. (Tr. at 204-207).

The Staff presented the testimony of eight witnesses: Lawrence T. Oliver, assistant director of the Commission's Division of Economics and Finance; Jarilaos Stavrou, principal research analyst in the Commission's Division of Economics and Finance; and Howard M. Spinner, senior utilities analyst in the Commission's Division of Energy Regulation; Tom Wilcox, environmental services biologist, DGIF; John Kauffman, regional fisheries manager, DGIF; Joseph Hassell, environmental program manager, DEQ, Office of Water Permits; Michael Murphy, division director for the Division of Environmental Enhancement, DEQ; and Charles Turner, director of the Office of Air Permit Programs, DEQ.

Mr. Oliver's testimony addressed the financial ability of Tenaska to construct the proposed Facility. Mr. Oliver found that Tenaska's parent company typically establishes a limited partnership to own a proposed generating asset. A general partner is also created to lead the development, act as the managing general partner, and is typically the largest equity or sole owner. Using this model, Tenaska and its affiliates have developed or are developing 13 large-scale electric generating projects in the United States and internationally. Tenaska and its affiliates are part of a privately-owned holding company headquartered in Omaha, Nebraska. The combined companies have approximately 7,200 MW of independent power production in operation, and an additional 6,000 MW in the project financing stage. (Ex. LO-7, at 2-3).

Tenaska plans to combine equity and non-recourse financing from large U.S. and international commercial banks, and/or the U.S. corporate bond market to finance the facility. Tenaska's affiliates have obtained over \$3 billion in financing for similar projects using both bank and bond funding sources. All of the parent company's projects have been financed in this manner.

Mr. Oliver believes Tenaska will be able to raise the necessary capital to finance the construction of the Facility. He recommends that the Commission grant Tenaska a certificate to construct the proposed Facility. (*Id.* at 3-5).

Although Tenaska has not entered into a purchase power contract for the sale of the output from the Facility, Mr. Oliver believes it is not critical at this juncture. As the Facility nears construction, he believes such a contract would be critical in order to obtain financing on terms that would make the project profitable and therefore more likely to be built. On the off chance Tenaska has problems obtaining financing, Mr. Oliver has some concern with the Commission granting a CPCN for a project that may never be built. To address this situation, Mr. Oliver recommends the Commission place a two-year sunset provision on any CPCN issued to Tenaska. (*Id.* at 5-6).

Mr. Stavrou addressed the economic impacts of the proposed Facility and evaluated whether the Facility is in the public interest. Although Tenaska did not include in its Application an evaluation of the economic impacts to be derived from the project using standard economic methodology, Mr. Stavrou did find in the Application that Tenaska has not received any grants or incentives from the County or the Commonwealth of Virginia. The Application further stated that, when completed, the Facility will be worth approximately \$250 million, and will employ approximately 25 to 30 full-time workers with an annual payroll of \$2 million. During construction, the Facility will employ approximately 500 to 600 construction workers. By comparison to other projects, Tenaska estimates the indirect benefits from the Facility would be about \$13 million per year during the two years the Facility is under construction and about \$3 million per year thereafter. Mr. Stavrou noted that the site for the proposed Facility is not located within an Enterprise or Empowerment Zone. Consequently, there will be no abatement of local property taxes. The County estimates a net gain from the property tax of over \$1 million per year. (Ex. JS-8, at 2).

Mr. Stavrou believes adding capacity in Virginia that is not controlled by the incumbent utility will have a positive impact on electric competition. Mr. Stavrou believes there is a positive correlation in the electric power industry between market power and the ownership or control of generating capacity. Although the Facility is expected to enter into a “tolling” agreement to sell the Facility’s output, he does not believe a wholesale power marketer could obtain enough power generation capacity in the area to exercise its own market power. Mr. Stavrou found that the Facility appears reasonable from the standpoint of economic development and promotion of a more competitive electric power industry in Virginia. He did not oppose Tenaska’s request for a CPCN. (*Id.* at 3-4).

Mr. Spinner described the criteria used by the Staff in evaluating the Application. Specifically, the Staff applied the criteria set forth in § 56-265.2 of the Code of Virginia. As part of its review, the Staff requested that DEQ perform a coordinated review of potential impacts of the proposed Facility. (Ex. HS-9, at 4-5).

The DEQ-coordinated review produced a number of conditions that DEQ recommends be included in any CPCN granted to Tenaska. The recommendations are as follows:

1. Provide a specific, documented description of the water conservation program, complete with estimates of:

- a) anticipated water demand for the project;
 - b) anticipated amount of wastewater returned to the river;
 - c) savings available through water conservation, and how the savings will be realized and kept in place.
- 2. Adhere to the amount of water withdrawal in DEQ's Virginia Water Protection Permit.
- 3. Provide an analysis of the cumulative impacts of combined water withdrawals for this project and those for another Tenaska power plant project proposed on the Buckingham County side of the James River.
- 4. Provide a single intake for water serving both power projects located in Fluvanna and Buckingham Counties, if both projects are pursued.
- 5. Utilize a two-step water conservation plan:
 - a) voluntary conservation measures undertaken either as part of regular operation or upon meeting specified low-flow conditions;
 - b) mandatory conservation measures undertaken upon meeting more severe low flow conditions. The site should have alternative cooling water storage available, and withdrawals from the river should cease or be significantly reduced.
- 6. To the extent practicable, design the water intake and wastewater lines to follow the alignment with fewer stream and wetland crossings or impacts.
- 7. Include in the Erosion and Sediment Control Plan stormwater management (Minimum Standard 19) for all land-disturbing activities associated with the power project and its water transmission lines.
- 8. Comply with the National Historic Preservation Act section 106 coordination requirements with the Department of Historic Resources, if applicable.
- 9. Institute a long-term monitoring program to sample water quality, particularly for changes in alkalinity and pH, at Fluvanna Ruritan Lake (owned by the Department of Game and Inland Fisheries), two miles from the project. The sampling should take place twice a month from January through March for the duration of the project.
- 10. Implement a maximum 1.0 mm mesh size and .25 feet per second approach velocity at the water intake screens to protect early life history stages of fish due to impingement and entrapment:

- a) orient the intake screens to make use of the sweeping velocity; this can be accomplished by angling the screen face no more than 45 degrees off parallel to the flow; and
- b) make adjacent screen bay piers and walls flush with the screen surface, so that the sweeping velocity is not impeded.

Id. at 7-9; Appendix 1-A.

Mr. Spinner believes a number of the DEQ's concerns may be addressed as Tenaska moves forward with the project, as Tenaska may voluntarily agree to the conditions. (*Id.* at 9).

Mr. Spinner also found that the Facility could interconnect with Dominion Virginia Power's electric grid without upgrading the existing transmission network system. (*Id.* at 4-5; Attachment HMS-1).

Mr. Spinner believes the proposed Facility generally meets the criteria delineated in § 56-265.2 of the Code of Virginia as it relates to the financial impact on regulated rates and electrical reliability. As for the environmental issues, Tenaska still must obtain all the necessary environmental permits to construct and operate the Facility. After hearing the evidence, Mr. Spinner believes the Commission may incorporate specific conditions in the CPCN relating to environmental issues that may go beyond the scope of the environmental permitting process. (*Id.* at 15-16).

Mr. Spinner addressed several public policy issues relating to this project and electric industry restructuring. First, the cumulative impact of this and other gas-fired power plants will have an impact on natural gas commodity markets and physical gas flows. Almost all of the new power plants proposed for Virginia are to be fueled by natural gas. Second, Mr. Spinner believes that under electric restructuring, unregulated market-based supply will interact with demand to produce a more efficient allocation of resources than the prior price and entry regulated regime. If Virginia's public policy is to be implemented, Mr. Spinner believes that projects such as Tenaska's proposed Facility must be given every opportunity to compete and succeed. Any detrimental impacts from the proposed Facility should be efficiently mitigated to allow for the creation of the benefits expected to result from industry restructuring. (*Id.* at 16-17).

Mr. Wilcox testified that DGIF's role in the Tenaska coordinated environmental review was threefold. First, as Virginia's comprehensive wildlife management agency, it is responsible for the management of non-game and game species, and endangered and threatened species, excluding plants and insects. Secondly, DGIF looks at optimizing recreational opportunities for the general public, which would include hunting, fishing, and wildlife watching, both consumptive and non-consumptive uses. Thirdly, DGIF looks at providing maximum safety for those participating in these types of activities. (Tr. at 218-19).

Mr. Wilcox reviewed Tenaska's proposal for the water infiltration structure to be located on the bottom of the James River. Although this is the first time such a structure has been proposed in Virginia, Mr. Wilcox believes it meets DGIF's criteria and DGIF is satisfied with its design. Tenaska has also satisfied DGIF's concerns over water conservation by agreeing to voluntary and

mandatory water conservation measures, and in-stream flow triggers linked to the City of Richmond and Henrico County withdrawals. DGIF is currently working with Tenaska to do a habitat assessment to determine whether the James River site is home to any James Spiny Mussels or Atlantic Pigtoe Mussels, both threatened or endangered species. If it is, DGIF will work with Tenaska to inventory and relocate those creatures to other suitable habitat. (Tr. at 220-22).

Mr. Wilcox confirmed that DGIF is requesting that Tenaska test the water at the Fluvanna Ruritan Lake twice a month during January through March, a total of six samples. This is the period of least biological activity in the lake and the period it is most susceptible to changes in alkalinity. (Tr. at 222-23).

Finally, Mr. Wilcox stated DGIF would assist Tenaska in developing any type of wildlife management plan, wildlife observation plan, or nature trail for the 500-acre buffer around the Facility. DGIF would also support any partnering with ECTI if it constructs the reservoir in Buckingham County. Mr. Wilcox stated DGIF has several programs in which it partners with industrial companies to enhance wildlife opportunities. DGIF already has a wildlife management area just downstream from the Facility so it is already in the area and is willing to assist Tensaka in any way possible. (Tr. at 223-25).

Mr. Kauffman testified there is one area where DGIF has some concerns regarding water withdrawals from the James River. If the Buckingham County power plant is not built, DGIF expects Tenaska to implement voluntary water conservation measures when Richmond and the surrounding areas have implemented such measures, even though Tenaska has not reached the 28 cubic feet per second ("cfs") withdrawal allowed in its permit. (Tr. at 226-27).

Mr. Kauffman believes monitoring the Fluvanna Ruritan Lake is important. About 2,500 anglers per year use the Lake, making it an important fishery resource. In DGIF's previous water sampling at the Lake, data showed that the Lake would be sensitive to acidification. Even though Tenaska's models show the Facility will not impact the lake, Mr. Kaufman believes it is important to verify those models with hard data. In all the projects in which Mr. Kauffman has been involved, the monitoring program proposed in this case is the least costly program DGIF has ever recommended. If the acid levels in the lake rise, DGIF will take measures to treat the Lake with ground limestone or sand limestone. (Tr. at 227-29, 231-32).

Mr. Kauffman also stated DGIF would be willing to work with Tenaska and ECTI on other possible uses for the reservoir if it is built. If the reservoir were open to the public, DGIF would stock the reservoir with fish, provide fish management, and would work on supplying access to the reservoir. DGIF understands that the water in the reservoir would be subject to drawdown, and it would accept that as part of any management plan. It currently works with other reservoir owners where this may occur. DGIF also has a wetlands biologist that could work with Tenaska to design and create wetlands habitat around the perimeter of the reservoir. Mr. Kauffman confirmed that DGIF has a wildlife habitat partners program in which it works with industrial companies that have large tracts of land to manage the land to benefit wildlife. (Tr. at 229-32).

Mr. Hassell testified he is responsible for reviewing ECTI's request for a water withdrawal permit. ECTI has applied to withdraw 28 cfs from the James River. The Application indicates that

the Facility will need 13 cfs of water, and the remainder would be reserved for other future customers, including the Tenaska power plant proposed in Buckingham County. Under state law, the right to withdraw water from any river is limited to such water as can be beneficially used by the public to be served. He confirmed that DGIF will recommend to DEQ that a condition be placed in the water withdrawal permit to require ECTI's customers to engage in water conservation measures when Richmond has implemented water conservation. Mr. Hassell believes it will take at least until January to complete the water withdrawal permitting process. ECTI has not yet supplied the proposed pipeline route to DEQ. (Tr. at 235-38).

Until the hearing, Mr. Hassell was unaware that ECTI may be considering the construction of a reservoir. (Tr. at 235).

Mr. Murphy described DEQ's coordinated environmental review process. Mr. Murphy believes the coordinated environmental review is important because it goes beyond the typical permit reviews. The coordinated review may raise concerns from state agencies that may or may not be included in any permit issued by that agency, and the Commission, in a CPCN case, could address those concerns. An example of this is the two-step water conservation plan recommended by DGIF. Mr. Murphy expressed his concern that ECTI was not part of this process, yet it is ECTI that is proposing to build the intake structure in the James River and it is ECTI that will have to comply with DGIF design restrictions. Although Tenaska has said that an infiltration bed will be built, unless a condition is placed in the CPCN, there may be no mechanism to prevent ECTI from using some alternative design. (Tr. at 252-60).

Mr. Turner testified there were no air recommendations contained in the coordinated environmental review. He clarified two points raised by previous witnesses. First, in response to Dr. Kunkel's testimony, Mr. Turner stated the air quality increment analysis is a separate type of analysis within the air quality requirements of the PSD regulations. It is included as part of the air quality model. Second, in response to one of the public witness's testimony concerning local ozone concentrations, Mr. Turner stated DEQ has no approved local ozone models for stationary sources. Mr. Turner was not clear on the process the witness used to translate emissions into specific concentrations of ozone with respect to a specific source. (Tr. at 268-69).

Mr. Turner responded to the issue concerning the cumulative impact of the various proposed power plants on air quality in the County. Within the PSD permit regulations, there is no definition for the concept of cumulative impact. The public has introduced the concept in various permit application cases like Tenaska's. DEQ is grappling with the concept and it may be difficult to convert into a regulatory process. The process now requires modeling with a very low trigger point set for additional multi-source modeling. It is only after the trigger point has been met that additional sources of emissions are considered and included in the modeling. DEQ establishes a radius area within which multi-source modeling would have to be done. Typically, the radius is 50 kilometers plus the distance from the facility to the receptor that measured the emissions above significance. Mr. Turner believes the multi-source modeling that is part of the air quality analysis for PSD, addresses the cumulative impact issue. In this case, Tenaska's modeling shows that it is below the significance levels of emissions and the Facility's impact on the air quality standard would be *de minimis*. (Tr. at 270-74).

On rebuttal, Dr. Kunkel addressed two issues. First, the DGIF witness raised the issue of water withdrawals from the James River and conservation measures. It is Tenaska's position that it would comply with any restrictions placed on ECTI, so that if Richmond is conserving water, it would be conserving water. Secondly, Dr. Kunkel pointed out that the significance levels for the Facility's NOx emissions range from .37 to .94 under various operating scenarios. Under the worst case scenario, it was assumed the Facility would operate at 100% capacity for the entire year, use its allowed 720 hours of fuel oil and its black-start diesel engines for the maximum 125 hours, and operate under the worst possible weather conditions that have occurred over a five-year period. Under these conditions, the Facility's NOx emissions reached .94, which is below the significance level of 1.0. The same held true for the Facility's other emissions; they were all under the significance level. (Tr. at 282-89; Ex. GK-6, at 6-31).

DISCUSSION

In their joint issues filing, the parties identified for the Commission the issues that need to be decided in this case. The issues will be addressed in a slightly different order in this Report; the public witnesses' issues will be addressed first.

Standard of Review

Section 56-265.2 B of the Code of Virginia provides, in part, that:

... the Commission ... may permit the construction and operation of electrical generating facilities, which shall not be included in the rate base of any regulated utility whose rates are established pursuant to Chapter 10 (§ 56-232 *et seq.*) of this title, upon a finding that such generating facility and associated facilities including transmission lines and equipment (i) will have no material adverse effect upon the rates paid by customers of any regulated public utility in the Commonwealth; (ii) will have no material adverse effect upon reliability of electric service provided by any such regulated public utility; and (iii) are not otherwise contrary to the public interest. In review of its petition for a certificate to construct and operate a generating facility described in this subsection, the Commission shall give consideration to the effect of the facility and associated facilities, including transmission lines and equipment, on the environment and establish such conditions as may be desirable or necessary to minimize adverse environmental impact as provided in § 56-46.1. Facilities authorized by a certificate issued pursuant to this subsection may be exempted by the Commission from the provisions of Chapter 10 (§ 56-232 *et seq.*) of Title 56.

The most critical as well as the most broad and vague standard in the legal analysis above is subsection (iii). The standard states, in part, that: "[t]he Commission ... may permit the construction and operation of electrical generating facilities . . . upon a finding that such generating facility and associated facilities including transmission lines and equipment . . . are not otherwise

contrary to the public interest.” (emphasis added). Whose “public interest” does the Commission consider? Is it the entire state or the community in whose backyard the proposed electric generating facility is to be located? How much impact on their community or quality of life do local residents have to show before the standard is triggered? When does the cumulative impact of the increased air pollution resulting from all the new electric generating facilities proposed in Virginia affect the public interest? Several of the public witnesses questioned whether Virginia actually “needs” the Facility’s additional generating capacity. Unfortunately, “need” is no longer a factor in the Commission’s analysis. As with most of its cases, the Commission will have to balance the interests of the parties in this case and try to reach a decision that is “fair and reasonable” for all parties. Even if a proposed electric generating facility meets all three of the standards set forth above, the General Assembly’s use of the word “may” in the preamble of the statute permits the Commission to exercise its discretion whether or not to ultimately issue a CPCN. Typically, Commission decisions are upheld in such cases unless there is a clear showing the Commission abused its discretion in reaching its decision, or there was no evidence upon which the Commission could base its decision. *Stafford Serv. Corp. v. State Corp. Commission*, 220 Va. 559, 562, 260 S.E.2d 226, 228 (1979); *Bralley-Willett Tank Lines, Inc. v. Holtzman Oil Corp.*, 216 Va. 888, 890-91, 223 S.E.2d 892, 895 (1976).

Comments of Public Witnesses

Of the many issues raised by the public witnesses, there were three which had a significant impact on my review of the proposed Facility. The first issue involved the traffic that will be associated with the Facility after it is operational. As it proposes to operate, the Facility may require up to 4,000 tanker truckloads of fuel oil during the six-month period that it requested to use an alternative fuel. Given the state of the roads in the area, the public witnesses were concerned there could be a serious accident between a fuel oil tanker truck and a school bus or other vehicle. The second issue related to air quality. One witness made an analogy between a pound of coffee and the Facility’s air emissions. He had a keen appreciation for what 13 million pounds of “stuff” would look like floating around in the air. Although the witness was incorrect on the amount of the Facility’s emissions per year, his testimony made its point. If the Facility operated at 100% capacity for 8,040 hours on natural gas and 720 hours on fuel oil, it would emit approximately 1,074,474 lbs. of NO_x; 141,516 lbs. of SO₂; 2,174,573 lbs. of CO; 552,870 lbs. of VOC; 437,526 lbs. of PM; and 51,350 lbs. of sulfuric acid mist, or a total of 2,216 tons of emissions, into the atmosphere every year it is operational. Finally, there was the testimony that, if an electric generating facility were to locate in Fluvanna County, it should be the best facility possible.

After hearing this testimony, I found one common thread that linked the witnesses’ concerns: the Facility’s use of fuel oil as an alternative fuel. After carefully studying the Facility’s need for fuel oil, I am absolutely convinced that the Facility’s operation on fuel oil would not be in the public interest. Its operation on fuel oil results in unnecessary truck traffic in the area and unnecessary increased emissions of NO_x, SO₂, PM, and sulfuric acid mist.

The SUP approved by the Board permits Tenaska to burn fuel oil as an alternative fuel during October through March, for no more than 720 hours. The Facility is designed to have on-site storage for approximately 3.5 million gallons of fuel oil, which is enough to operate at 100% capacity for 72 hours. If the Facility used the entire 720 hours allocated for alternative fuel

operation, it would consume 35 million gallons of fuel oil. To meet this operational tempo, the Facility would require approximately 4,000 tanker truckloads of fuel oil over the six-month period, or an average of 22 tanker truckloads per day. Unfortunately, the Facility's requirement for an alternative fuel may not be predicted easily. It may operate one hour, 12 hours, 72 hours, or never. If the Facility operated on fuel oil for 72 hours continuously, it would need 400 tanker truckloads of fuel delivered in very short order to refill its storage tanks. The Facility literally burns fuel oil as fast as it can be pumped into its storage tanks. I can easily envision a situation where tanker trucks would be lined up bumper to bumper waiting to unload their cargo at the Facility.

Tenaska has not articulated very well its need to burn fuel oil as an alternative fuel. On the one hand, it has said that it needs the capability to burn fuel oil in "emergencies," without stating when and under what circumstances those emergencies might occur. On the other hand, it has said that it rarely operates on fuel oil because it has found that operating on fuel oil is expensive and extremely hard on its equipment. Is an "emergency" an interruption in natural gas supplies or a spike in natural gas prices? With the number of merchant electric generating facilities under construction or planned for Virginia, I cannot imagine a single situation where an "emergency" will require the Facility's operation on an alternative fuel to meet the demand for electricity in Virginia.⁶

Tenaska is constructing and operating the Facility. The yet to be named "tolling" partner will purchase and then sell the Facility's entire output, and arrange fuel deliveries to the Facility. The Facility is designed to operate as a base load generator, not a peaker plant. I can understand the need for a peaker plant to use fuel oil as an alternative fuel, but not a base load generator. Tenaska's "tolling" partner should know to the kilowatt the Facility's production demand. Therefore, it would be incumbent upon the "tolling" partner to match natural gas fuel deliveries to the Facility's output. This is certainly not an overly complex logistical operation. Although the natural gas fuel to the Facility would be delivered through one pipeline, the "tolling" partner could arrange with a number of interstate gas suppliers to meet the Facility's demand, thus reducing the probability that any one supplier would be unable to meet its delivery obligation.

By eliminating the possible use of fuel oil, the Facility's most harmful emissions, NO_x, SO₂, PM and sulfuric acid mist, are measurably reduced. Attachment 1 to this Report compares the Facility's use of both natural gas and fuel oil, to its use of natural gas only. The potential reductions per year are as follows: NO_x emissions could be reduced by 2.09%, or 11.24 tons; SO₂ emissions could be reduced by 25.72%, or 18.2 tons; PM could be reduced by 2.75%, or 6.03 tons; and sulfuric acid mist could be reduced by 13%, or 3.34 tons. Tenaska would argue that its air quality modeling shows that, even assuming the worst case scenario, emissions from the Facility do not reach the significance level for any of the criteria pollutants.⁷ The simple response to this argument is: Why should Virginians be exposed to additional air pollution unless it is absolutely necessary to the success or failure of this particular project? Tenaska has not established that it is absolutely necessary for this base load electric generating facility in Virginia to use fuel oil as an alternative fuel to meet the emergency electric demand of Virginia consumers. Additionally, Tenaska's air

⁶ Based on data available from the Virginia Economic Development Partnership, as of August 2001, there were 27 new electric generating facilities proposed in Virginia. The data indicate there were 28, but the Wolf Hills Energy facility is already operational.

⁷ The flaws in the PSD modeling analysis will be discussed later in the Report.

modeling analysis fails to take into consideration the air quality impact of the 4,000 diesel tanker trucks on Fluvanna County, or other portions of Virginia where they may travel.

Finally, with merchant electric generating facilities popping up in Virginia faster than dandelions in the springtime, the Commission will have the opportunity to scrutinize each application to determine which facilities truly are “not otherwise contrary to the public interest.” Once the Commission makes its decision to approve a CPCN, Virginia will have to live with that decision for 30 to 50 years. If Virginia is going to be the epicenter of merchant power plant production in the mid-Atlantic region of the United States, it might as well have the most technologically advanced, least polluting electric generating facilities possible.

A. Local Land Use

The public witnesses also raised issues related to local land use, which I found less compelling in light of the Board’s approval of the SUP and the conditions attached to the SUP.

Several public witnesses expressed their concern with the manner in which the Fluvanna County Board of Supervisors (the “Board”) conducted the public hearings on Tenaska’s application for a SUP, and the Board’s departure from the County’s comprehensive land use plan when it approved, despite significant public opposition, the construction of an electric generating facility in an area zoned rural residential.

The Board approved the SUP for the Facility on November 16, 2000. The SUP contains 34 conditions with which Tenaska must comply. The conditions include: inspection of the Facility by local authorities to ensure compliance with the SUP or any applicable permits; no abatement of local property taxes; a requirement that Tenaska provide the first response to any emergency at the Facility; noise attenuation measures during construction and operation; restrictions and approval requirements for site lighting; landscape and buffer provisions, including the location of the Facility on the site, management of the tree buffer surrounding the site, and dedication of the buffer area into an approved land conservation program; traffic management during construction and operation; environmental compliance measures, including obtaining all necessary environmental permits, utilizing the Best Available Control Technology (“BACT”) for air emissions, site restoration if the plant ceases production of electricity, and a prohibition on water removal from the Rivanna River; and general compliance measures. (Ex. WB-2, Attachment 2).

The Commission may consider the impact of a proposed electrical generating plant on local comprehensive land use plans when requested to do so pursuant to § 56-46.1 A of the Code of Virginia. The statute provides, in part, that:

[w]henver the Commission is required to approve the construction of any electrical utility facility, it shall give consideration to the effect of that facility on the environment and establish such conditions as may be desirable or necessary to minimize adverse environmental impact. In such proceedings it shall receive and give consideration to all reports that relate to the proposed facility by state agencies concerned with environmental protection; and if requested by any county or municipality in which the facility is proposed to be built, to local comprehensive

plans that have been adopted pursuant to Article 3 (§ 15.2-2223 *et seq.*) of Chapter 22 of Title 15.2. (emphasis added).

The Commission has no jurisdiction to review the Board's decision to issue a SUP allowing the construction of the Facility in a rural residential area. The statute set forth above allows the Commission to consider local comprehensive plans in its analysis of whether to issue a CPCN, "if requested" by the local governing body. The Board has not requested that the Commission consider the Facility's impact on the County, or the County's comprehensive land use plan. On the contrary, the Board's issuance of the SUP, and the conditions set forth in the SUP, indicate the Board already considered the impact of the Facility on land use in the County and sought to mitigate that impact. Land use is a matter of local concern and it appears to have been addressed in this case by the local governing body.

1. Effect of Special Use Permit Appeal on Zoning Issues

The mechanism set forth by the General Assembly for citizens to contest the issuance of a SUP is to file an action in the Circuit Court having jurisdiction of the land affected by the decision.⁸ Two lawsuits were filed in the Circuit Court of Fluvanna County (the "Court") relating to the SUP. The Court has dismissed both lawsuits. At this point, I can find no compelling reason to delay any decision in this matter.

2. Land Values

Several public witnesses expressed their concern that the Facility will have a negative impact on property values in the area. The witnesses primarily fall into two categories, those whose property adjoins the Facility and those who live in the Lake Monticello community. The Lake Monticello community is located approximately four miles away from the proposed Facility.

In response to citizen concerns, Tenaska agreed with the County to offer a Value Protection Plan (the "Plan") to residents living along Route 761, which is the road leading to and adjoining, the proposed plant site. Approximately 30 homes located along this road would be eligible to participate in the Plan. The residents living in Lake Monticello would not be eligible to participate.

Tenaska believes the Facility will not have an impact on land values, but in order to alleviate the concerns of its neighbors, it proposed the Plan. (Tenaska Post-Hearing Brief at 17).

The Staff believes the County and Tenaska have taken significant steps to ensure that the Facility imposes a minimal adverse impact on neighboring landowners. (Staff Post-Hearing Brief at 5-6).

The Plan has a number of important features. If a homeowner registers, he may select an independent real estate appraiser from a list of local real estate appraisers to perform an "Initial Appraisal" to determine the fair market value of his home. Tenaska pays the cost of the "Initial

⁸ See, Section 15.2-2285 F of the Code of Virginia.

Appraisal.” The appraiser is specifically instructed to value the home as if there were no electric generating facility in the neighborhood. If there is a disagreement as to the amount of the “Initial Appraisal,” Tenaska and the homeowner have the right to ask for a “Second Appraisal(s)” to be performed by a new appraiser. The party requesting the “Second Appraisal” is responsible for paying its cost. The parties then have an opportunity to negotiate the fair market value of the home using the “Initial” and “Second Appraisal.” If the parties are unable to reach an agreement, the “Initial” and “Second Appraisers” appoint a “Final Appraiser” to conduct a “Final Appraisal” on the property. The “Final Appraisal” is binding on the homeowner and Tenaska. Tenaska has agreed to purchase the property for a period of four years from the date it issues its Final Notice to Proceed to the general contractor selected to build the Facility. (Ex. WB-3).

I find the Plan offered by Tenaska reasonably addresses the concerns expressed by homeowners living along Route 761 regarding the Facility’s impact on property values. I further find that the proposed Facility is far enough away from the Lake Monticello community that it should have no impact on land values in that area.

3. “Rural Lifestyle”

Several public witnesses testified they moved to the County to get away from city life, industrial sites, and air pollution. They wanted a “rural lifestyle.” The area in which they live is zoned rural residential and consists of large and small acreage home sites, farms and woods. They believe the Facility is an incompatible use for such an area.

Tenaska argues the Board of Supervisors considered citizen comments regarding “rural lifestyle” in its SUP deliberations. As a result, the SUP contains 34 conditions that are designed to maintain that lifestyle. Tenaska further argues the review of local zoning decisions should not be a Commission function. (Tenaska Post-Hearing Brief at 17-18).

The Staff also believes the County and Tenaska have taken significant steps to ensure the Facility imposes a minimal adverse impact on the rural lifestyle of the community. (Staff Post-Hearing Brief at 5-6).

The proposed site is well-suited for an electric generating facility. Except for the requirement in the SUP that Tenaska place a sign at the entrance to the proposed Facility, the 500-acre tree buffer surrounding the site, which Tenaska must maintain, will effectively shield the Facility from view. Someone taking a Sunday drive in the country to see farms, fields, and woods should be oblivious to the fact that there is an electric generating facility located on the site. The same is also true for those living near the site of the Facility. I find the Board of Supervisors adequately addressed the issue of “rural lifestyle” in the SUP. As I have previously stated, the local governing body is responsible for land use in the County, which includes whether or not to maintain the County’s “rural lifestyle.”

4. Impact on Monticello

Several public witnesses indicated the Commission should consider the Facility’s impact on *Monticello*.

In its Post-Hearing Brief, Tenaska states the Thomas Jefferson Foundation did not submit comments, file testimony, or testify in opposition to the Facility. Additionally, there has been no evidence, empirical or otherwise, brought before the Commission to prove that the Facility will have any impact on *Monticello*. (Tenaska Post-Hearing Brief at 18).

The Staff did not address this issue in its Post-Hearing Brief.

The evidence in the record supports a finding that the Facility's operation solely on natural gas will have no measurable impact on *Monticello*.

5. Visual Impact

One of the public witnesses expressed his concern that the Facility, and its associated smokestacks and cooling tower, would dwarf the landscape in the area.

Tenaska argues the 500-acre wooded buffer and the fact the Facility will be painted neutral earth tones will minimize its visual impact. As an experiment, Tenaska raised a red weather balloon on the proposed site to the height of one of the Facility's smokestacks. As Mr. Braudt testified, there were very few places near the proposed site where someone could even see the balloon. The balloon could only be viewed from very few locations away from the site. (Tenaska Post-Hearing Brief at 18-19).

The Staff did not specifically address this issue in its Post-Hearing Brief. However, it is Staff's position that the SUP, which includes requirements for the buffer and the paint scheme for the proposed Facility, generally ensures that the project will have a minimal impact on neighboring landowners and the community's rural lifestyle. (Staff Post-Hearing Brief at 5-6).

I find the Facility's visual impact on the surrounding community would be minimal. The 500-acre buffer surrounding the proposed site is densely wooded with large mature pine trees and will effectively shield the Facility from view.

B. Traffic

If the Commission prohibited the Facility from using fuel oil as an alternative fuel, this would resolve the public witnesses' concerns over truck traffic once the Facility is operational. This leaves the issue of traffic during construction.

Tenaska argues the SUP requires it to develop a traffic management plan that will address traffic flow into and out of the Facility. The traffic management plan will address minimizing traffic impacts during construction, and deliveries to the Facility after it is operational. The traffic management plan will be approved by VDOT. (Tenaska Post-Hearing Brief at 19).

Although the Staff did not specifically address the traffic issue in its Post-Hearing Brief, the Staff believes the SUP, which includes requirements for traffic management, ensures that the

project will have a minimal impact on neighboring landowners and the community's rural lifestyle. (Staff Post-Hearing Brief at 5-6).

Conditions 23 and 24 of the SUP address traffic management.⁹

Increased truck traffic during the construction process is unavoidable. It is a temporary inconvenience. The timing of traffic in and out of the construction site can be coordinated to minimize its impact on the surrounding residential community. Condition 24 of the SUP adequately addresses traffic concerns during construction of the Facility. However, the SUP does not address traffic into the Facility after construction is completed. Condition 23 merely provides that VDOT approve access to the Facility and Tenaska provide the required improvements. Presumably, this Condition addresses whether the road will be widened at the entrance to the Facility to accommodate a turn lane. It does not address the 4,000 tanker truckloads of fuel oil that may have to be delivered to the Facility, if the Facility is ultimately allowed to operate on an alternative fuel.

Issues Raised by Staff Witnesses and Hearing Examiner

A. Environmental Issues

1. Air

The majority of the testimony at the hearing related to air quality in the area of the proposed Facility. The citizens are concerned with air quality in their community. The County is already home to one coal-fired electric generating plant, and another natural gas-fired electric generation plant has been proposed to be located northwest of the Facility. Tenaska's emissions modeling analysis, which uses the most conservative assumptions possible (the Facility operating year-round at 100% capacity; winter weather conditions to generate the maximum emissions possible; and summer weather conditions, hot stagnant air, for worst case atmospheric conditions), indicates that the Facility's emissions do not meet the significance level for any of the criteria pollutants. This evidence was supported by the DEQ's air quality witness who testified the Facility's impact on air quality standards would be *de minimis*.

Tenaska's Post-Hearing Brief provides an excellent summary of the federal Clean Air Act ("CAA") and the Virginia State Air Pollution Control Law ("SAPCL"), and the current regulations that implement those laws. In addition, Tenaska addressed the three air quality issues raised at the hearing, which include: adequacy of existing DEQ analysis; cumulative impact of proposed electric generation facilities and the PSD permitting process; and the Facility's impact on the Shenandoah National Park. (Tenaska Post-Hearing Brief at 5-11).

The Staff did not address the air quality issues in its Post-Hearing Brief.

(a) Adequacy of Existing DEQ Analysis/Cumulative Impact of Proposed Electric Generating Facilities and the PSD Permitting Process

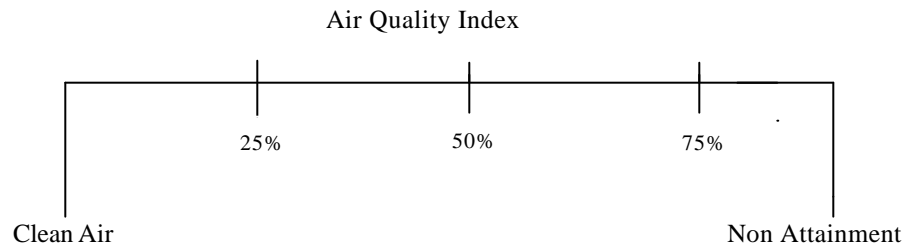
DEQ's existing PSD air quality modeling analysis consists of a two-step process.

⁹ See, note 4, *infra*.

The analysis has a significance level for criteria pollutants. Generally, DEQ reviews each application for an emissions permit in isolation. It does not take into consideration other pollution sources in the surrounding area, unless the applicant's emissions models show it exceeding the significance level for a criteria pollutant. If the significance level is exceeded, then DEQ requires the applicant to include other pollution sources within a 50- kilometer (31 miles) radius and conduct additional air quality modeling. For example, the NAAQS standard for NO_x is 100 parts per million per cubic meter of air. The significance level is one part per million per cubic meter of air. Tenaska's air modeling analysis indicates that the Facility's NO_x emissions would range from .37 to .94 under various operating scenarios. Assuming the worst case scenario, the Facility's NO_x emissions, and its emissions of other criteria pollutants, do not exceed the significance level for those pollutants. Consequently, DEQ did not require Tenaska to conduct any additional emissions modeling. The position stated by DEQ's air quality witness is that the Facility's emissions are so small they would not have a cumulative impact on air quality.

There are two areas where I believe DEQ's existing air quality modeling analysis could be modified to provide a better assessment of the impacts of the proposed Facility.

First, it appears DEQ's existing air quality analysis assumes there is no air pollution in attainment areas. The public knows the air in non-attainment areas such as Northern Virginia is already polluted and understands that greater measures must be taken to protect air quality. In an area such as Fluvanna County, which is in attainment of the NAAQS, the public does not know where along the continuum of air quality the County falls and what measures are being taken to ensure that the County remains in attainment. Notably, the record in this case gives no indication of the level of air pollution that currently exists in the County. It is probably safe to say that the air in the County is not perfect. It has some levels of air pollution, but what are the levels? I heard from more than one witness that the level of air pollution in the Shenandoah National Park, which is along the western boundary of the County, ranks it as one of the worst in the country. The stated goal of the PSD permitting process is to prevent significant deterioration of air quality. Under the current policy it appears that slight incremental increases in pollution are acceptable. Unless DEQ includes a community's existing air quality standard in its analysis, it will not know when an area reaches non-attainment until it is already too late to do anything about it. The graph below illustrates this point. Where does the County's current level of air pollution place it on the graph, and how much closer to non-attainment will the addition of the Facility place the County?



Second, it appears DEQ's existing air quality analysis fails to take into account cumulative increases in air pollution. I appreciate the fact that lines have to be drawn and standards have to be set. Under existing air quality regulations, the significance levels for criteria pollutants are extremely small. Expressed as a fraction, the significance level for NO_x is 1/100th of the NAAQS.

The problem I have with the current air quality analysis is that, as long as applicants model beneath the significance level, the analysis completely ignores incremental increases in the overall level of pollutants in the air. The current system does not “prevent” significant deterioration, it merely delays it. With Fluvanna County becoming the epicenter of electric power production in Virginia, based on the evidence in this case, 100 combined cycle electric generating plants, just like Tenaska’s, could locate in Fluvanna County without having an impact on Fluvanna County’s air quality. Somehow, I just do not believe that would be the case. Perhaps, there should be other factors in the air quality analysis besides modeling significance. DEQ may wish to distinguish between major and minor stationary pollution sources, and require the major pollution sources to conduct the cumulative impact modeling as a matter of course. Additionally, DEQ may wish to consider requiring the modeling not only at a 50-kilometer radius from the source, but also 100-kilometers. The additional modeling would instill greater confidence in the public that their health will not be impacted by such pollution sources.

In terms of Tenaska’s Application, the evidence in the record supports a finding that the Facility’s operation solely on natural gas has no significant impact on air quality in Fluvanna County, using the air quality modeling analysis in effect at the time the Application was filed. However, I recommend that the Commission direct its Staff to discuss with DEQ possible enhancements in the air quality analysis used for major stationary pollution sources, and address them in the next electric generation facility application to come before the Commission.

(b) Visibility impact on Shenandoah National Park

Tenaska argues its air modeling indicates the Facility will not adversely impact the Shenandoah National Park. The air modeling indicates the Facility will have no significant impact on visibility or other air quality-related values in the Park. (Tenaska Post-Hearing Brief at 10-11).

The Staff did not address this issue in its Post-Hearing Brief.

If the Commission adopts the recommendation to prohibit the use of fuel oil at the Facility, the Facility’s emissions of SO₂, the precursor to acid rain, would be reduced by approximately 25% thereby reducing any impact the Facility may have on the Shenandoah National Park. The evidence in the record supports a finding that the Facility’s operation solely on natural gas does not have a significant impact on air quality in the Shenandoah National Park.

2. Water

(a) Reservoir Wildlife Habitat and/or Multiple Use Option

As part of its water usage contingency planning, Tenaska states it is considering contracting with another Tenaska affiliate to use water that will be stored in a proposed reservoir to be constructed in Buckingham County, Virginia. The affiliate is developing another Tenaska electric generating facility in Buckingham County. (Tenaska Post-Hearing Brief at 12).

The Staff did not address this issue in its Post-Hearing Brief.

It is unclear from the evidence in the record what role Tenaska or ECTI will play in the reservoir. Dr. Kunkel, the Tenaska witness testifying in this case, was reluctant to discuss whether the reservoir was even going to be built, except to say that if it was built another Tenaska affiliate, not Tenaska Virginia Partners, L.P., would build it. He would not commit to any other potential uses for the reservoir. I had the sense from the bench that the witness was not as forthcoming with his testimony as he otherwise could have been.¹⁰ Dr. Kunkel, who is the environmental manager for both Tenaska and ECTI, stated in his rebuttal testimony that ECTI plans to transport water through its pipeline being built to serve the Facility to “a reservoir to be constructed and owned by another Tenaska affiliate, on the south side of the James River. This reservoir will be used for plant operations in lieu of withdrawals from the James River during drought periods.” (Ex. GK-5, at 3). At the hearing, Dr. Kunkel testified that ECTI, as part of managing its business risk, was considering the construction of the reservoir. (Tr. at 166-77).

The evidence raises a number of questions. Does the Facility require a source of water other than the James River to meet its operational needs during drought conditions when withdrawals from the James River are curtailed; if so, what will that source be? If Tenaska is planning to use water from some source other than the James River, then its use of water from that source is subject to Commission scrutiny in this case, whether or not the water is filtered through some other corporate affiliate. The Commission should prohibit Tenaska from using water from any source other than the James River, until Tenaska clarifies its position with respect to such water usage and its impact on the environment.

(b) Monitoring the Fluvanna Ruritan Lake

In the coordinated environmental review, DGIF requested that Tenaska be required to sample the water at the Fluvanna Ruritan Lake for changes in alkalinity twice a month during January through March, a total of six water samples every year. This is the least restrictive monitoring program DGIF has ever requested.

Tenaska’s position is that its PSD modeling shows that the Facility will have no significant impact on water quality at the Fluvanna Ruritan Lake. However, Dr. Kunkel testified at the hearing that Tenaska was willing to work with DGIF and participate in water monitoring at the Lake. (Tenaska Post-Hearing Brief at 13).

The Commission should include in any CPCN issued in this case a condition, in accordance with DGIF’s request, that Tenaska sample the water at the Lake.

(c) James River Withdrawal/Conservation (ECTI)

Tenaska argues ECTI has developed a drought contingency plan that includes

¹⁰ It is apparent why Tenaska incorporated ECTI as a public service corporation. Since Tenaska was not incorporated as a public service corporation, it has no right of eminent domain. It incorporated ECTI as a public service corporation in order to have the right to condemn private property to run its water lines to the proposed generating facilities in Fluvanna and Buckingham Counties. Since ECTI serves less than 50 customers, it is not required to obtain a certificate of public convenience and necessity from the Commission. It is required to file its tariff with the Commission, but is not otherwise regulated by the Commission. This is clearly an example of a public service corporation exploiting its right of eminent domain. This loophole in the law should be closed.

both voluntary and mandatory conservation measures, including cessation of withdrawals from the James River, and this plan will be addressed in DEQ's water withdrawal permitting process. Tenaska argues the conservation restrictions that would apply to ECTI would also apply to its customers. (Tenaska Post-Hearing Brief at 13-14).

The Staff expressed its concern that the Commission may have insufficient information in the record regarding ECTI's water operations. The Staff noted that, at the hearing, Tenaska continually stressed ECTI was a separate entity, it was not a party in this case, and Tenaska was not appearing on behalf of ECTI. Yet Tenaska continually offered assurances concerning ECTI's water conservation program. The Staff is unsure of the status of the water recommendations in the DEQ's report to the Commission. In Staff's opinion, Tenaska and ECTI are "inextricably linked." Consequently, the Commission may find that the recommendations touching ECTI's water permit should be addressed in this proceeding and the CPCN issued to Tenaska conditioned accordingly. (Staff Post-Hearing Brief at 7-10).

As I understand the DGIF officials' concerns, the water recommendations included in the DEQ coordinated review may, or may not, make it into any water permit issued to ECTI. Their concern is Tenaska's promises that ECTI will comply with any permit issued may, in effect, be a hollow promise. I share the same concern. At the hearing, Tenaska made it abundantly clear that it had no authority to bind any other affiliate. As a consequence, I am unable to fully evaluate the Facility's need for water from the James River to control emissions, and the impact of those withdrawals on the environment. Therefore, the Commission should withhold issuance of any final CPCN to Tenaska until such time as it files a copy of the water withdrawal permit issued to ECTI. At that time, the Commission should verify that the recommendations set forth by DEQ in this proceeding are included as conditions in that permit.¹¹

The Commission should be particularly vigilant that the permit issued to ECTI addresses water conservation measures for the Facility in the event Tenaska's other affiliate does not build the generating plant proposed for Buckingham County. This was another concern expressed by DGIF officials. The water withdrawal permit will establish a maximum withdrawal rate of 28.2 cfs from the James River, which is slightly above the amount necessary to serve both facilities. If the Buckingham County facility is not built, ECTI might be able to continue withdrawing water from the James River to meet 100% of the Facility's demand when everyone else downstream is engaged in water conservation, and still be in "compliance" with its water withdrawal permit. The Commission should ensure there are no loopholes in ECTI's water withdrawal permit that would enable the Facility to avoid water conservation measures when Henrico County and the City of Richmond have implemented such measures.

¹¹ Recommendations 4 and 10 appear to be rendered moot. ECTI's water permit application indicates that it is proposing to construct a single water infiltration bed, rather than intake screens. The infiltration bed should eliminate any concerns of DGIF officials for aquatic life in the river. The Commission should adopt Tenaska's position with respect to Recommendation 6. This recommendation addresses stream crossings. ECTI has proposed to route its pipeline along existing utility rights-of-way. Although this route may have slightly more stream crossings, it has less of an impact on the public. Horizontal drilling beneath any stream crossing would mitigate the impact on the environment, and any impact that might result would be only temporary. This leaves Recommendations 1, 2, 3, and 5 to be addressed in the water withdrawal permit.

2. Site

(a) Conservation Buffer

The 500-acre buffer surrounding the Facility's proposed site is an important component of the project. It will provide a visual and noise buffer. Condition 17 in the SUP requires Tenaska to place a permanent conservation easement on the buffer area.

Tenaska has agreed to seek advice from state agencies and other consultants to compile a list of groups to be considered to hold the conservation easement, and then work with the County to select the group to hold the easement. Tenaska has also agreed to develop a forestry management plan to ensure the continuing health of the tree buffer. (Tenaska Post-Hearing Brief at 14).

The buffer area is planted predominantly in loblolly pine trees. My concern is that some forestry best management practices may call for clear-cutting these trees. This is especially true if pine beetles are allowed to infest the stand of trees. If portions are clear-cut, the benefits of the buffer will be lost to surrounding landowners for a significant period of time.

The Commission should require Tenaska to consult with DGIF and DOF to develop a forestry management plan that will provide for the gradual thinning of the pine trees and their replacement with a more biodiverse stand of trees. This will not only provide for the long-term health of the buffer, but also improve its usefulness as a habitat for wildlife. In addition, the Commission should specifically prohibit any clear-cutting of the buffer area.

B. Emergency Response

Several public witnesses stated the County's emergency management personnel, volunteer firefighters, and rescue squad personnel are too far away, poorly trained, and ill-equipped to respond to an emergency at the Facility.

Under the terms of the SUP, Tenaska must provide the first response to any emergency at the Facility. Tenaska has stated it will develop an integrated emergency management plan that will address all federal, state, and local emergency management regulations. The integrated emergency management plan will be shared with the Board and the County's emergency management personnel. Tenaska states the Facility will be designed to minimize the effects of any emergency and to enable the Facility's personnel to respond to any emergency from the control room. The Facility's employees will be trained to respond to fires and other emergencies. In addition, the Facility will have on-site fire fighting equipment, including water storage, which will be compatible with the County's equipment. (Tenaska Post-Hearing Brief at 14-15).

The Staff did not address this issue in its Post-Hearing Brief.

Tenaska's emergency management plan adequately addresses the public witnesses' concerns involving safety at the Facility and any response should an actual emergency occur. There are, however, two areas where the Commission should condition any CPCN. First, Tenaska should include in its integrated emergency management plan, procedures for contacting off-duty plant

personnel, such as requiring the use of pagers, to assist with any emergency at the Facility. Off-duty personnel could provide invaluable assistance to any emergency response personnel at the scene in terms of understanding the layout of the Facility and its emergency control devices and equipment. In addition, they would be a source of additional manpower to respond to the emergency. This is especially important if the Facility's control room personnel were incapacitated in the initial stages of the emergency. Second, Tenaska should be required to conduct, at least annually and at its own expense, an emergency response training exercise with County emergency management personnel. The training should focus on "real world" emergencies that may occur at the Facility, including explosions, fires, hazardous materials spills, or personnel casualties. The training should include a formal critique and the preparation of "lessons learned" after the completion of each training exercise.

C. Economic Impact

The evidence indicates that Tenaska will pay approximately \$1 million per year in property tax to the County, and that the property tax will not be abated. In addition, Tenaska will employ approximately 25 – 30 full-time workers with an annual payroll of approximately \$2 million. It is estimated the Facility will generate \$13 million per year in indirect benefits during construction and \$3 million per year during its operating life.

The additional tax revenue and jobs generated by the Facility will benefit Fluvanna County's economy. The challenge for the Board is to balance growth in the County with its citizens' desire to maintain the County's "rural lifestyle." The Facility, and access to reliable electric power, may influence other businesses or manufacturing companies to locate in Fluvanna County. The Board must plan for this growth now.

FINDINGS AND RECOMMENDATIONS

Based on the evidence received in the case, and for the reasons set forth above I find that:

- (1) The Facility will have no material adverse effect upon the rates paid by customers of any regulated utility in the Commonwealth;
- (2) The Facility will have no material adverse effect upon the reliability of electric service provided by any such regulated public utility;
- (3) The Facility is not otherwise contrary to the public interest, except as set forth below;
- (4) The Facility's operation on fuel oil as an alternative fuel is contrary to the public interest, and should be specifically prohibited by the Commission in any CPCN issued to Tenaska;
- (5) The Commission lacks jurisdiction to review the decision of the Fluvanna County Board of Supervisors to issue a SUP to Tenaska permitting the construction of the Facility in an area zoned rural residential;

(6) The SUP issued by the Fluvanna County Board of Supervisors adequately addresses the public witnesses' concerns related to "rural lifestyle" and the Facility's visual impact;

(7) Tenaska's Value Protection Plan addresses the concerns of the residents living along Route 761 that the Facility may have an impact on land values;

(8) The Facility should have no impact on land values in the Lake Monticello community;

(9) The evidence in the record supports a finding that the Facility's operation solely on natural gas will have no measurable impact on the air quality around *Monticello*;

(10) Condition 24 of the SUP adequately addresses traffic concerns during construction of the Facility;

(11) The evidence in the record supports a finding that the Facility's operation solely on natural gas will have no significant impact on air quality in Fluvanna County;

(12) The evidence in the record supports a finding that the Facility's operation solely on natural gas will have no significant impact on air quality in the Shenandoah National Park;

(13) The evidence in the record is unclear whether Tenaska requires water from a reservoir proposed for Buckingham County for its operations when water withdrawals from the James River are curtailed because of drought conditions, and whether the proposed reservoir would have an impact on the environment;

(14) The CPCN issued to Tenaska should contain a condition requiring it to sample the water at the Fluvanna Ruritan Lake, in accordance with Recommendation 9 in DEQ's coordinated environmental review;

(15) The Commission should grant Tenaska preliminary approval, pursuant to § 56-265.2 of the Code of Virginia, to construct the Facility pending receipt of a copy of the water withdrawal permit issued to ECTI. The Commission should verify that DEQ Recommendations 1, 2, 3, and 5 are included as conditions in that permit. If the recommendations are not included in ECTI's water withdrawal permit, then the Commission should make them conditions in any CPCN issued to Tenaska;

(16) The CPCN issued to Tenaska should contain a condition requiring it to consult with the DGIF and DOF to develop a forestry management plan for the buffer area surrounding the Facility, and should include a specific prohibition against clear-cutting the buffer area;

(17) Tenaska's emergency management plan adequately addresses the public's concerns involving safety at the Facility and any response should an actual emergency occur;

(18) The CPCN issued to Tenaska should require it to incorporate procedures for contacting off-duty personnel in the Facility's emergency management plan in the event of an actual emergency;

(19) The CPCN issued to Tenaska should require it to conduct, at least annually and at its own expense, an emergency response training exercise with the County's emergency management personnel, such training to focus on "real world" emergencies that may occur at the Facility;

(20) The evidence supports a finding that the Facility will provide a positive economic benefit to the County;

(21) The Commission should grant Tenaska interim approval, pursuant to § 56-234.3 of the Code of Virginia, to make financial expenditures and undertake preliminary construction work on the Facility;

(22) The Commission should grant Tenaska preliminary approval, pursuant to § 56-265.2 of the Code of Virginia, to construct the Facility pending receipt of copies of all environmental or other operating permits, at which time it should issue Tenaska a CPCN with the conditions set forth herein;

(23) The Commission should grant Tenaska an exemption, pursuant to § 56-265.2 B of the Code of Virginia, from Chapter 10 of Title 56 of the Code of Virginia when it issues Tenaska a CPCN;

(24) The CPCN issued to Tenaska should contain a condition that it will expire two years from the date it is issued, if construction on the Facility has not commenced; and

(25) The CPCN issued to Tenaska should incorporate the parties' Stipulation.

I therefore **RECOMMEND** the Commission enter an order that:

(1) **ADOPTS** the findings contained in this Report;

(2) **GRANTS** Tenaska interim approval, pursuant to § 56-234.3 of the Code of Virginia, to make financial expenditures and undertake preliminary construction work on the Facility;

(3) **GRANTS** Tenaska preliminary approval, pursuant to § 56-265.2 of the Code of Virginia, to construct the Facility pending receipt and verification of the environmental or other permits necessary to operate the Facility; and

(4) **RETAINS** jurisdiction of the case until further order of the Commission.

COMMENTS

The parties are advised that any comments (Section 12.1-31 of the Code of Virginia and 5 VAC 5-20-120 C) to this Report must be filed with the Clerk of the Commission in writing, in an original and fifteen (15) copies, within twenty-one (21) days from the date hereof. The mailing address to which any such filing must be sent is Document Control Center, P.O. Box 2118, Richmond, Virginia 23218. Any party filing such comments shall attach a certificate to the foot of

such document certifying that copies have been mailed or delivered to all counsel of record and any such party not represented by counsel.

Respectfully submitted,

Michael D. Thomas
Hearing Examiner

Tenaska Virginia Partners, L.P. Emissions Analysis

**Emission Rates
lbs/hour
100% Capacity Factor
Single Turbine**

	NOx	SO ₂	CO	VOC	PM	Sulfuric Acid Mist
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Natural Gas	40.03	4.00	83.98	22.25	16.19	1.70
Fuel Oil	50.44	20.85	68.97	7.50	21.77	4.79

**Total Emissions in lbs.
100% Capacity Factor
All Three Turbines**

Natural gas – 8,040 hrs	1,074,474	141,516	2,174,573	552,870	437,526	51,350
Fuel oil – 720 hrs						
All Natural Gas - 8760 hrs	1,051,988	105,120	2,206,994	584,730	425,473	44,676
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Difference	22,486	36,396	32,422	31,860	12,053	6,674
% Difference	-2.09%	-25.72%	+1.49%	+5.76%	-2.75%	-13.00%
Net Change in Tons per year	-11.24	-18.20	+16.21	+15.93	-6.03	-3.34

**Data Source : Ex. GK-6, Appendix B: Emission
Calculations – Criteria Pollutants**

**Note: - Decrease
+ Increase**